AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently amended)   A method for the calculation and back-solving of complex relationships in a sub-cube of a multidimensional database system comprising the steps of:

a) inputting from a user for at least one specified cell, the required values of specified cells and any constraints a required value, or the required value and one or more constraints, the required value and the constraints being taken into account in calculations;

b) where more than one calculation may affect a cell, selecting a calculation for the affected cell in accordance with a set of prioritisation rules;

c) creating one or more parent/child tables giving the relationships and dependencies between one or more target cells and other cells in the sub-cube;

d) determining from the one or more parent/child tables the one or more target cells, each requiring one or more a back-solving calculation[[s]] to be performed to set a value of the specified cell to the required value;

e) for each target cell requiring backsolving calculations:

i) performing the one or more back-solving calculation[[s]] for the target cell and recording that a change has taken place;

ii) remembering the one or more parent cells of the target cell to ensure they are recalculated;

iii) recalculating the value[[s]] for each remembered parent cell and recording that a change has taken place;

iv) repeating the i) performing, ii) remembering, and iii) recalculating steps until all changes to the target cells and their parent cells are complete;

v) repeating the i) performing, ii) remembering, iii) recalculating, and iv) first repeating steps until no changes are recorded; and

[[e)]] f) reporting the results of the foregoing steps to the user.

Claim 2 (Currently amended): The method of claim 1 wherein the Parent/Child table creating step c) is carried out as part of the performing ~~one or more~~ the back-solving calculation[[s]] step i), ~~so that~~ thereby reducing a number of access times to access a particular cell in smaller, less complex sub-cubes~~, there is some advantage taken in the reduced number of times a particular cell is accessed~~.

3. (Currently amended) A system for calculating and back-solving complex relationships in a sub-cube of a ~~multi-dimensional~~ multidimensional database system comprising:

a) means for inputting from a user for at least one specified cell, ~~the required values of specified cells and any constraints,~~ a required value, or the required value and one or more constraints, the required value and the constraints being taken into account in calculations;

b) means for selecting a calculation for [[the]] an affected cell in accordance with a set of prioritisation rules;

c) means for creating one or more parent/child tables giving the relationships and dependencies between one or more target cells and other cells in the sub-cube;

d) means for determining from the one or more parent/child tables the one or more target cells ~~requiring one or more backsolving calculations to be performed and remembering said target cells~~, each target cell requiring a back-solving calculation to set a value of the specified cell to the required value;

e) means for implementing the back-solving calculation for each target cell, including:

[[e)]] i) means for performing the ~~one or more~~ back-solving calculation[[s]] for ~~each said remembered~~ the target cell and recording that a change has taken place;

[[f)]] ii) means for remembering the one or more parent cells of said target cell to ensure they are recalculated;

[[g)]] iii) means for recalculating the value[[s]] for each remembered parent cell and recording that a change has taken place; and

h) means for reporting the results of the forgoing means to the user.

4. (Currently amended)   A computer program product for calculating and back-solving complex relationships in a sub-cube of a ~~multi-dimensional~~ multidimensional database system the computer program product comprising a computer-readable storage medium having computer-readable program code means embodied in it, said computer readable program code means comprising:

a) computer readable program code means for inputting from a user for at least one specified cell, ~~the required values of specified cells and any constraints,~~ a required value, or the required value and one or more constraints, the required value and the constraints being taken into account in calculations;

b) computer readable program code means for selecting a calculation for [[the]] an affected cell in accordance with a set of prioritisation rules;

c) computer readable program code means for creating one or more parent/child tables giving the relationships and dependencies between one or more target cells and other cells in the sub-cube;

d) computer readable program code means for determining from the one or more parent/child tables the one or more target cells, each requiring ~~one or more~~ a back-solving calculation[[s]] ~~to be performed~~ to set a value of a specified cell to the required value;

e) means for implementing the back-solving calculation for each target cell, including:

[[e)]] i) computer readable program code means for performing the ~~one or more~~ back-solving calculation[[s]] for ~~each said remembered~~ the target cell and recording that a change has taken place;

[[f)]] ii) computer readable program code means for remembering the one or more parent cells of the target cell to ensure they are recalculated;

[[g)]] iii) computer readable program code means for recalculating the value[[s]] for each remembered parent cell and recording that a change has taken place; and

[[h)]] f) computer readable program code means for reporting the results of the foregoing computer readable program code means to the user.

Claim 5 (Previously presented):   The method of claim 1 wherein the step b) includes the step of accepting from a user an adjustment to the prioritisation rules.

Claim 6 (Previously presented):   The method of claim 1 including after step b) the step of:

b1) checking the sub cube for consistency.